Purple Martin

Progne subis

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GENERAL RANGE AND WASHINGTON DISTRIBUTION

Purple martins breed locally from southern Canada to central Mexico (Brown 1997) and winter in South America (Ehrlich et al. 1988)

In Washington, they typically breed near the waters around the Puget Sound, along the Strait of Juan de Fuca, the southern Pacific coastline, and near the Columbia River (see Figure 1; S. Kostka, personal communication). Unconfirmed records suggest that other potential breeding areas might also be found from the Willamette Valley up through Thurston County.

Figure 1. Generalized breeding range of the purple martin (*Progne subis*) in Washington based a compilation of confirmed sightings (S. Kostka, personal communication).

RATIONALE

The purple martin is a State Candidate species. This species has a high public profile and are vulnerable to population fluctuations due to a limited distribution and loss of suitable natural nesting cavities (Brown 1997).

HABITAT REQUIREMENTS

Purple martins are insectivorous, colonial nesting swallows that nest in cavities (Brown 1997). In Washington, most martins have been reported nesting in artificial structures near cities and towns in the lowlands of western Washington. Historically, they probably bred in old woodpecker cavities in large dead trees, but only a few such nests are known to exist in Washington today (Brown 1997, Russell and Gauthreaux 1999). The eastern race of purple martins often nest in apartment-style nest-boxes, while the western subspecies, found here in Washington, prefer to nest individually (Pridgeon 1997).

The nest site preferences of the purple martin have been studied at Fort Lewis in Pierce County (Bottorff et al. 1994). Martins nested in a variety of artificial nesting structures, including wood duck boxes. No purple martin nesting activity was detected in artificial nesting structures on land; all artificial cavities were over freshwater wetlands, ponds or saltwater. Swallows were found nesting in both natural and artificial cavities intermingled with martin nests, possibly competing for nest sites. More recent observations documented four pairs nesting in natural snag cavities near water at Fort Lewis (S. Kostka, personal communication). Martins were also recently found nesting in boxes well away from water just outside of the fort in Spanaway.

Purple martins feed in flight on insects (Ehrlich et al. 1988, Brown 1997). Favorable martin foraging habitat includes open areas, often located near moist to wet sites, where flying insects are abundant.

LIMITING FACTORS

The decline of the purple martin is attributed to the lack of snags containing nest cavities (Bottorff et al. 1994) as well as competition for nesting cavities with more aggressive European starlings (*Sturnus vulgaris*) and house sparrows (*Passer domesticus*; Bottorff et al. 1994, Brown 1997).

MANAGEMENT RECOMMENDATIONS

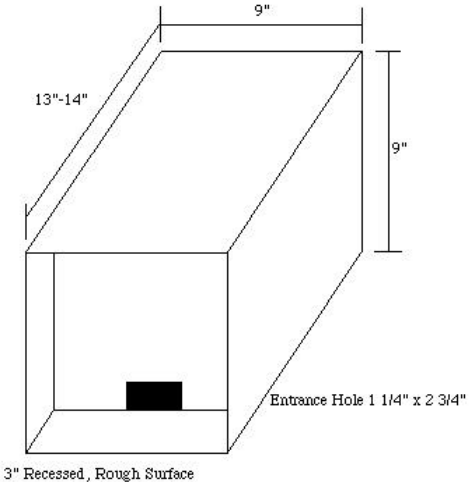

Figure 2. Purple martin nest box plan (Courtesy of Tom Lund, USFWS 1985).

In Washington, purple martins are known to nest in cavities located in old pilings over water and occasionally in snags (United States Fish and Wildlife Service 1985, Milner 1987). These pilings and snags (especially snags near water) should be protected and left standing. The removal of creosote-coated pilings that contain a purple martin nest box or that possibly contain cavities used by martins should be closely coordinated with the Washington Department of Fish and Wildlife (M. Tirhi, personal communication). Snags should be retained during timber harvesting operations near saltwater and wetlands (Milner 1988), including salvage operations after burns, blow-downs, and insect infestations (United States Fish and Wildlife Service 1985). Prescribed burns can be used as a tool to create favorable martin foraging habitat. Snags can be created in forest openings, or at forest edges (e.g., by topping trees) where nesting cavities are lacking, especially within 16 km (10 mi) of an existing purple martin colony (United States Fish and Wildlife Service 1985). Because northern flickers and pileated woodpeckers excavate cavities used by martins, managing for these species will indirectly benefit martins (K. Bettinger, personal communication).

Because of their dependence on insects for food, purple martins can be impacted by the broad use of pesticides (United States Fish and Wildlife Service 1985). If insecticide or herbicide use is planned for areas where this species occurs, review Appendix A for contacts to assist in assessing the use of chemicals and their alternatives.

Although artificial nesting structures are an important tool for the conservation of purple martins, they should not replace the protection of natural nesting structures (e.g., snags) and the habitat used by this species (S. Kostka, personal communication). If natural sites are lacking and cannot be provided by manipulating habitat, artificial nesting structures can be provided. A number of artificial nest designs have been developed and work relatively well. Below are the specifications for one such design (United States Fish and Wildlife Service 1985):

1) Construct nest boxes using a design such as that shown in Figure 2. Box dimensions should be at least 10" x 7" x 7". It is important to make the entrance 1 1/4" high, continuous with the porch floor. The top of the opening should be sanded smooth. The porch is a necessary feature, and the floorboard should be rough to provide traction. These features, particularly the size of the opening, will aid in dissuading house sparrows and starlings from taking over the nest boxes.

2) Protect boxes from wet weather by sealing edges with caulking material. Painting or varnishing the wood, using cedar for construction or protecting the roof with galvanized tin, can provide additional protection. Provide drainage holes in the box floor and ventilation holes near the top.

3) Locate boxes in existing colonies first. Locate additional boxes in suitable habitat within 16 km (10 mi) of existing colonies. A minimum of 3 boxes should be erected at each site for this colonial nesting species (J. Bottorff, personal communication); however, populations in the west do not appear to use the apartment style houses that eastern populations are so well known for (B. Tweit, personal communication).

4) Locate boxes near (preferably above) water or wetlands with minimum clear air space of 4.5 m (15 ft), preferably 30 m (100 ft), for circling and foraging around the nest. Erect houses high enough above the ground or water to avoid vandalism and high tides. J. Bottorff, personal communication) noted no difference in use of boxes erected from 1 m (3 ft) to 3 m (10 ft) above the water.

5) It is not necessary to remove martin nests from previous years. If nesting material is removed, it should be done in the spring and the contents placed in a dry spot beneath the nest. This is to allow for the emergence of chalcid wasps, which help to control Protocalliphora, a parasite on martin nestlings. The wasp larvae live in nest materials and will return to the martin boxes if old nests are left nearby.

6) Where European starlings and house sparrows are a problem, plug the box entrances from October to mid-April. If starlings establish themselves in a box, remove their nests, eggs, and young on a routine basis (they will renest several times in a breeding season). The same measures can be taken with house sparrows early in the breeding season; however, removal of sparrow nests later in the cycle may cause sparrows to wander into martin nests and destroy their young. Adult sparrows may be controlled. If this is impossible, remove eggs and young, but leave sparrow nests in later months to prevent sparrows from taking over martin nests.

7) Starlings and house sparrows are not classified as a protected species. However, other cavity-nesters that may inhabit martin boxes, such as swallows, are protected, and occupied swallow nests should not be removed.

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KEY POINTS

Habitat Requirements

- Nests in natural and artificial cavities, usually over water.
- Readily nest in bird boxes in areas where the species is already established.
- Usually nest in colonies.
- Foraging habitat includes open areas, often located near moist to wet sites, where flying insects are abundant.

Management Recommendations

- Retain snags during timber harvesting (especially near saltwater and wetland sites).
- Retain old pilings. The removal of creosote-coated pilings that contain a purple martin nest box or that contain cavities used by martins should be coordinated closely with the Washington Department of Fish and Wildlife.
- Create snags in forest openings and along forest edges if snags are lacking or limited.
- Use fires to create or maintain favorable martin foraging habitat, where appropriate.
- If pesticides are to be used in areas inhabited by martins, refer to Appendix A for contacts useful in assessing pesticides, herbicides, and their alternatives.
- Put up nest boxes when natural cavities are lacking or limited and cannot be created (see text for details).